


light receiving elements arranged in an array for outputting electric signals at levels corresponding to amounts of light received, wherein the light receiving elements output the electric signals in parallel; and

an information extraction circuit for receiving the plurality of electric signals output in parallel from the light receiving element array and extracting information in accordance with the optical information signal based on the plurality of electric signals.

 --2. (Amended) The receiving apparatus as set forth in claim 1, further comprising an optical system for condensing the optical information signal to a predetermined region of a light receiving region of the light receiving element array.

--3. (Amended) The receiving apparatus as set forth in claim 2, wherein:

the optical system is capable of adjusting a position of a light axis direction based on a control signal; and

the information extraction circuit outputs the control signal for adjusting the position of the light axis direction to the optical system when information in accordance with the optical information signal cannot be extracted based on the plurality of electric signals.

--4. (Amended) The receiving apparatus as set forth in claim 1, wherein a wavelength of the optical information

signal is within a visible wavelength range.

--5. (Amended) The receiving apparatus as set forth in claim 1, wherein the optical information signal includes information corresponding to bits of a plurality of bits of parallel data and is dispersed in a spatially predetermined range.

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--6. (Amended) The receiving apparatus as set forth in claim 2, wherein the optical information signal includes information corresponding to bits of parallel data of a plurality of bits and is dispersed in a spatially predetermined range.

--7. (Amended) The receiving apparatus as set forth in claim 3, wherein the optical information signal includes information corresponding to bits of parallel data of a plurality of bits and is dispersed in a spatially predetermined range.

--8. (Amended) The receiving apparatus as set forth in claim 4, wherein the optical information signal includes information corresponding to bits of parallel data of a plurality of bits and is dispersed in a spatially predetermined range.

--9. (Amended) The receiving apparatus as set forth in

claim 5, wherein the information extraction circuit comprises:

a binarizing circuit for binarizing the plurality of electric signals from the light receiving element array;

a data selection circuit for selecting data corresponding to the optical information signal from the plurality of binarized electric signals from the binarizing circuit; and

a conversion circuit for decoding data corresponding to the optical information signal selected by the data selection circuit and converting it from parallel data to serial data.

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--10. (Amended) The receiving apparatus as set forth in claim 6, wherein the information extraction circuit comprises:

a binarizing circuit for binarizing the plurality of electric signals from the light receiving element array;

a data selection circuit for selecting data corresponding to the optical information signal from the plurality of binarized electric signals from the binarizing circuit; and

a conversion circuit for decoding data corresponding to the optical information signal selected by the data selection circuit and converting it from parallel data to serial data.

--11. (Amended) The receiving apparatus as set forth in claim 7, wherein the information extraction circuit comprises:

a binarizing circuit for binarizing the plurality of electric signals from the light receiving element array;

a data selection circuit for selecting data corresponding to the optical information signal from the plurality of

binarized electric signals from the binarizing circuit; and
a conversion circuit for decoding data corresponding to
the optical information signal selected by the data selection
circuit and converting it from parallel data to serial data.

--12. (Amended) The receiving apparatus as set forth in
claim 8, wherein the information extraction circuit comprises:

A2 a binarizing circuit for binarizing the plurality of
electric signals from the light receiving element array;

a data selection circuit for selecting data corresponding
to the optical information signal from the plurality of
binarized electric signals from the binarizing circuit; and

a conversion circuit for decoding data corresponding to
the optical information signal selected by the data selection
circuit and converting it from parallel data to serial data.

--13. (Amended) A transmitting apparatus, comprising:

a conversion circuit for converting serially input data
to a plurality of bits of parallel data giving predetermined
information; and

a light emitting diode array having a number of light
emitting diode units corresponding to a number of bits of
parallel data from the conversion circuit arranged in an
array, wherein the respective light emitting diode units are
controlled in light emission in parallel based on bit
information of the corresponding parallel data to emit an
optical information signal dispersed in a spatially

predetermined range.

--14. (Amended) The transmitting apparatus as set forth in claim 13, wherein a wavelength of the optical information signal is within a visible wavelength range.

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--15. (Amended) A communication system, comprising:
a transmitting apparatus for transmitting an optical information signal; and

a receiving apparatus including a light receiving element array having a plurality of light receiving elements arranged in an array for outputting electric signals at levels corresponding to amounts of light received, wherein the light receiving elements output electric signals in parallel, and an information extraction circuit for receiving a plurality of electric signals output in parallel from the light receiving element array and extracting information in accordance with the optical information signal based on the plurality of electric signals.

--16. (Amended) The communication system as set forth in claim 15, wherein the receiving apparatus comprises an optical system for condensing the optical information signal to a predetermined region of a light receiving region of the light receiving element array.

--17. (Amended) The communication system as set forth in

claim 16, wherein:

the optical system is capable of adjusting a position of a light axis direction based on a control signal; and

the information extraction circuit outputs the control signal for adjusting the position of the light axis direction to the optical system when information in accordance with the optical information signal cannot be extracted based on the plurality of electric signals.

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--18. (Amended) The communication system as set forth in claim 15, wherein a wavelength of the optical information signal transmitted by said transmitting apparatus is within a visible wavelength range.

--19. (Amended) The communication system as set forth in claim 15, wherein the optical information signal transmitted by the transmitting apparatus includes information corresponding to bits of a plurality of bits of parallel data and is dispersed in a spatially predetermined range.

--20. (Amended) The communication system as set forth in claim 16, wherein the optical information signal transmitted by the transmitting apparatus includes information corresponding to bits of a plurality of bits of parallel data and is dispersed in a spatially predetermined range.

--21. (Amended) The communication system as set forth in

claim 17, wherein the optical information signal transmitted by the transmitting apparatus includes information corresponding to bits of a plurality of bits of parallel data and is dispersed in a spatially predetermined range.

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--22. (Amended) The communication system as set forth in claim 18, wherein the optical information signal transmitted by the transmitting apparatus includes information corresponding to bits of a plurality of bits of parallel data and is dispersed in a spatially predetermined range.

--23. (Amended) The communication system as set forth in claim 19, wherein the information extraction circuit of the receiving apparatus comprises:

a binarizing circuit for binarizing the plurality of electric signals from the light receiving element array;

a data selection circuit for selecting data corresponding to the optical information signal from the plurality of binarized electric signals from the binarizing circuit; and

a conversion circuit for decoding data corresponding to the optical information signal selected by said data selection circuit and converting it from parallel data to serial data.

--24. (Amended) The communication system as set forth in claim 20, wherein the information extraction circuit of the receiving apparatus comprises:

a binarizing circuit for binarizing the plurality of

electric signals from the light receiving element array;

a data selection circuit for selecting data corresponding to the optical information signal from the plurality of binarized electric signals data from the binarizing circuit; and

a conversion circuit for decoding data corresponding to the optical information signal selected by said data selection circuit and converting it from parallel data to serial data.

A2 --25. (Amended) The communication system as set forth in claim 21, wherein the information extraction circuit of the receiving apparatus comprises:

a binarizing circuit for binarizing the plurality of electric signals from the light receiving element array;

a data selection circuit for selecting data corresponding to the optical information signal from the plurality of binarized electric signals from the binarizing circuit; and

a conversion circuit for decoding data corresponding to the optical information signal selected by said data selection circuit and converting it from parallel data to serial data.

--26. (Amended) The communication system as set forth in claim 22, wherein the information extraction circuit of the receiving apparatus comprises:

a binarizing circuit for binarizing the plurality of electric signals from the light receiving element array;

a data selection circuit for selecting data corresponding

to the optical information signal from the plurality of binarized electric signals from the binarizing circuit; and

a conversion circuit for decoding data corresponding to the optical information signal selected by said data selection circuit and converting it from parallel data to serial data.

--27. (Amended) A communication system, comprising:

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a transmitting apparatus having a conversion circuit for converting serially input data to a plurality of bits of parallel data giving predetermined information and a light emitting diode array having a number of light emitting diode units corresponding to a number of bits of parallel data from the conversion circuit arranged in an array, wherein the respective light emitting diode units are controlled in light emission in parallel based on bit information of the corresponding parallel data to emit an optical information signal dispersed in a spatially predetermined range; and

a receiving apparatus including a light receiving element array having a plurality of light receiving elements arranged in an array for outputting electric signals at levels corresponding to amounts of light received, wherein the light receiving elements output electric signals in parallel, and an information extraction circuit for receiving a plurality of electric signals output in parallel from the light receiving element array and extracting information in accordance with the optical information signal based on the plurality of electric signals.

--28. (Amended) The communication system as set forth in claim 27, wherein the receiving apparatus comprises an optical system for condensing the optical information signal to a predetermined region of a light receiving region of the light receiving element array.

--29. (Amended) The communication system as set forth in claim 28, wherein:

A2 the optical system is capable of adjusting a position of a light axis direction based on a control signal; and

the information extraction circuit outputs the control signal for adjusting the position of the light axis direction to the optical system when information in accordance with the optical information signal cannot be extracted based on the plurality of electric signals.

--30. (Amended) The communication system as set forth in claim 27, wherein a wavelength of an information light transmitted by said transmitting apparatus is within a visible wavelength range.

--31. (Amended) The communication system as set forth in claim 27, wherein the information extraction circuit of the receiving apparatus comprises:

a binarizing circuit for binarizing the plurality of electric signals from the light receiving element array;

a data selection circuit for selecting data corresponding

to the optical information signal from the plurality of binarized electric signals from the binarizing circuit; and

a conversion circuit for decoding data corresponding to the optical information signal selected by said data selection circuit and converting it from parallel data to serial data.

--32. (Amended) The communication system as set forth in claim 28, wherein the information extraction circuit of the receiving apparatus comprises:

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a binarizing circuit for binarizing the plurality of electric signals from the light receiving element array;

a data selection circuit for selecting data corresponding to the optical information signal from the plurality of binarized electric signals from the binarizing circuit; and

a conversion circuit for decoding data corresponding to the optical information signal selected by said data selection circuit and converting it from parallel data to serial data.

--33. (Amended) The communication system as set forth in claim 29, wherein the information extraction circuit of the receiving apparatus comprises:

a binarizing circuit for binarizing the plurality of electric signals from the light receiving element array;

a data selection circuit for selecting data corresponding to the optical information signal from the plurality of binarized electric signals from the binarizing circuit; and

a conversion circuit for decoding data corresponding to